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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/519,672	03/06/2000	Toshihiko Ouchi	35.G2544	8718

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EXAMINER

THOMAS, COURTNEY D

ART UNIT PAPER NUMBER

2882

DATE MAILED: 03/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/519,672

Applicant(s)

OUCHI ET AL.

Examiner

Courtney Thomas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-80 is/are pending in the application.
- 4a) Of the above claim(s) 66-70 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-65 and 71-80 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s): \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Specification*

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
2. The abstract of the disclosure is objected to because of the following informalities:
3. p. 105, lines 5 and 6 read: ... "elastic supporter formed of a or plural layers, ..." This statement is ambiguous;
4. p.105, lines 7 and 8 read: ... "formed on the first substrate and electrically connected to the electrode." Also ambiguous, since there is mention of a two types of electrodes present within the device (see lines 2-3 on p.105).
5. Correction is required. See MPEP § 608.01(b).

### *Drawings*

6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first electrode having two wires connected to a p-side electrode and n-side electrode (see claim 15) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Objections***

7. Claims 1, 14, 15, 19, 21, 22, 31, 38, 39, 40, 43, 44, 45, 54, 55, 60, 61 and 62 are objected to because of the following informalities:

8. Claim 1 recites a device comprising device limitations (see lines 1-9), but also recites methodological limitations (see lines 9-12). The claim represents a hybrid claim, reciting both apparatus and method limitations. The presence of these limitations renders the claim ambiguous, as it is unclear what applicants consider being their invention.

9. Claim 14 recites a device having thin semiconductor layers with a functional portion formed by growing said thin semiconductor layers *on* a second substrate; and said functional portion *without* the second substrate ... The claim language seems to contradict itself and is therefore ambiguous. On p. 80, lines 15-17, the first section of claim 14 indicates that the functional portion of the device is formed on a second substrate; p.80, lines 17-19, recites a functional portion without the second substrate. From the language, there is nothing to suggest that a functional portion exists without a second substrate, since part (a) of claim 14 (p. 80, lines 15-17), states that growing layers on a second substrate forms the functional portion.

10. Claim 19 recites device limitations as well as a method of using the device as recited on p.81, lines 26-27 ... "said photo-detector being positioned in the vicinity of said surface light emitting device." It is the position of the examiner that the use of the term *being positioned* reflects a methodological action or step. Thus the claim takes on a hybrid quality, reciting both apparatus and methodological limitations. The presence of these limitations renders the claim ambiguous. Examiner also notes that within this claim 19, the phrase "... surface light emitting device being supported by said first substrate through an elastic supporter..."(p.81, lines 21-22)

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reflects the integration of parts and the functional relationship there between; and is not to be misconstrued as an active (methodological) step.

11. Claims 21, 22 and 31 recite a device and methodological limitations (methods of forming) that render the claims ambiguous. In particular, claim 21 recites an apparatus, wherein "... said minute opening is formed..." (p. 82, line 8); claim 22 recites an apparatus wherein "... said minute opening is formed..." (p.82, line 12); and claim 31 recites "... an apparatus wherein said photo-detector is integrally laid down on a said surface ... said light emitting device are placed on said elastic supporter ..." (p.84, lines 20 and 22). Examiner also notes that on p.84, line 25, should read, "... said elastic supporter *is* electrically connected..."

12. Claim 24 recites a device and a method of making i.e. "... thin semiconductor layers grown on a second substrate, and said second substrate *is mounted* on said elastic supporter."

13. Claims 26, 27, 28, 38, 39, 40, 43, 44, 45, 54, 55, 60, 61 and 62, are ambiguous due to the presence of device and methodological (method of use and/ or making) limitations.

14. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 1, 2-4 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta et al. (U.S. Patent 5,294,790) in view of Fujii (U.S. Patent 6,091,084).

17. As per claim 1, Ohta et al. disclose a device comprising a p-electrode and an n-electrode (i.e. Fig. 18, p-electrode #711, n electrode #712; column 8, lines 38-65) and a substrate (i.e. Fig. 18, #701). Ohta et al. do not however, explicitly disclose an electrode wiring comprising at least a wire formed on said substrate and electrically connected to said p-electrode or n-electrode.

18. Fujii discloses a semiconductor LED comprising a p and an n electrode and a substrate. Fujii discloses an electrode wiring (i.e. Fig. 3, #8a, 8b) formed on said substrate (i.e. Fig. 3, #7) and electrically connected to said p-electrode and n-electrode.

19. Fujii teaches that the electrode wiring, formed on the substrate and connected to the p-electrode and n-electrode, serves to maintain the potential of the respective contact surfaces. Fujii teaches the benefit of such construction, resulting in a substrate being free from electrification due to static electricity (see column 4, lines 24-27).

20. One would have been motivated to make such a modification, based on the teachings of Fujii, that an electrode wiring formed on a substrate and connected to a p-electrode or n-electrode maintains the potential of the respective contact surfaces and results in a substrate being free from electrification due to static electricity. Additionally, practitioners in the art would recognize that the presence of electrodes within a device would allow the propagation of electrons (and or holes) to various areas within the device.

21. As per claims 2-4, 12, Ohta et al. as modified, disclose an apparatus that meet the limitations recited in these claims (see Ohta et al. concerning member with minute opening: i.e. Fig. 1, #110 (embodiment 1); evanescent light generation: Background of the Invention (column 1, column 2, lines 1-23); minute protrusion member (i.e. Fig. 1, #110); semiconductor laser: i.e. Figs 18, 19).

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22. As per claims 13 and 14, Ohta et al. as modified, disclose an apparatus that meet the limitations of the aforementioned claims (see Fig. 1).

23. As per claim 15, Ohta et al. as modified, disclose an apparatus as recited in claim 1, but do not explicitly disclose the wiring comprising two wires connected to a p-side or n-side electrode of the surface device.

24. Ohta et al. as modified, however, teach the use of wiring for maintaining the potential of the respective contact surfaces with the benefit being a substrate being free from electrification due to static electricity. Additionally, it is taught that electrodes within a device allow the propagation of electrons (and or holes) to various areas within the device.

25. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify Ohta et al., such that it incorporated an electrode wiring with two wires to connect to a p-side and n-side electrode.

26. One would have been motivated to make such a modification, based on the teachings of Ohta et al., modified in view of Fujii, that electrode wiring (i.e. connections) maintain the potential of the respective contact surfaces with the benefit being a substrate being free from electrification due to static electricity. Additionally, practitioners in the art would recognize the benefit of multiple contacts (wires) serving as additional conduits for the propagation of electrons (and/or holes).

27. Claims 5, 6-11, 16-65 and 71-80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta et al. (U.S. Patent 5,294,790) in view of Fujii (U.S. Patent 6,091,084) as applied to claims 1, 2-4 and 12-15 above, and further in view of Shimada et al. (U.S. Patent 6,201,226).

28. As per claim 5, Ohta et al. as modified, disclose a device as recited in claim 1, except the device being supported by a first substrate through an elastic supporter and an electrode wiring formed on the first substrate and the elastic supporter.

29. Shimada et al. disclose a device having a tip with a micro aperture for detecting or irradiating light for use in near field applications (see Background of the Invention column 1, column 2, lines 1-16).

30. Shimada et al. disclose a device being supported by a first substrate (i.e. Fig. 1, #21) through an elastic supporter (i.e. Fig.1, #10) and an electrode wiring (i.e. Fig. 2a #33) formed on the first substrate and the elastic supporter (see Fig. 2a).

31. Shimada et al. teach the use of a first substrate and an elastic support as means for configuring the device to be responsive to forces (such as atomic force – see abstract, column 2, line 36). Shimada et al. also teach the forming of the electrode wiring (i.e. Fig. 2a, #33) as a means for voltage application to the device supported by the elastic member (column 7, lines 46-48).

32. One would have been motivated to make such a modification, based on the teachings of Shimada et al. that an elastic support (supported by a first substrate) enables a device to be responsive to forces, so that the sense impressions can be used to analyze a material surface. The presence of an elastic support allows the device to be used in force responsive applications, such as atomic force microscopy. Additionally, one would have been motivated by the teachings of Shimada et al., who point out that the forming of an electrode wiring on the substrates, serves as an unobtrusive means for directing voltage (or current) to the device to ensure operability.

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33. As per claims 6-11 and 18, Ohta et al. further modified in view of Shimada et al., disclose a device as recited in claim 5, and meet all the limitations recited in the aforementioned claims (see Shimada et al. substrate compositions: column 3, lines 53-67, column 4, lines 1-43; wire portions: i.e. column 9, lines 1-8, Fig. 2A; plurality of devices: column 2, lines 19-25, Fig. 13; elastic supporter shape: i.e. Fig.2A; see Ohta et al. plurality of devices, Fig. 32).

34. As per claims 16 and 17, Ohta et al. further modified in view of Shimada et al., disclose an apparatus that meet the limitations of the aforementioned claims (see Fig. 1).

35. As per claims 19-28, Ohta et al. further modified in view of Shimada et al., disclose an apparatus that meet the limitations of the aforementioned claims (i.e. photo detector Fig. 4, see also respective portions of the specification).

36. As per claims 29-65, Ohta et al. further modified in view of Shimada et al., disclose an apparatus that meet the limitations of the aforementioned claims (see respective portions of cited specifications).

37. As per claims 71-80, Ohta et al. further modified in view of Shimada et al., disclose methods of use for the disclosed apparatus that meet the limitations of the aforementioned claims (see abstract, Background of the Invention, and respective portions of the cited specifications).

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Courtney Thomas whose telephone number is (703) 306-0473.

The examiner can normally be reached on M - F (9 am - 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305 3492. The fax phone numbers for the


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organization where this application or proceeding is assigned are (703) 746-7227 for regular communications and (703) 746-7227 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

Courtney Thomas

March 11, 2002

  
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